	Application No.	Applicant(s)
Notice of Allowability	09/866,101	HELLMAN ET AL.
	Examiner	Art Unit	
	Cam Y T. Truong	2162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *11/7/2005*.

2. ☒ The allowed claim(s) is/are *1,2,5,6,8,10-12,14-20,25-35,46,47,50,51,53,55-57,59-63,68-78,89,90,93,96,98-100,103-106 and 111-118*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of

        Paper No./Mail Date _____ .

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date *7/30/01 & 2/15/02*

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)

6. ☒ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

DETAILED ACTION

1. Applicant has amended claims 1-5, 18, 22, 24, 25, 30-32, 46-50, 65, 67, 73, 75, 89-93, 108, 110, 113-115 and withdrawn claims 36-45, 79-88 in the amendment filed on 11/7/2005.

    Claims 1-118 are pending in this Office Action.

Drawings

2. The filed drawing 5/25/2001 is accepted.

EXAMINER'S AMENDMENT

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

    Authorization for this examiner's amendment was given in a telephone interview with Marc A. Berger on 1/5/2006.

    In claim:

    Please replace claims 1, 5, 8, 10-12, 30, 46, 50-51, 53, 55-57, 59, 61, 63, 68, 76, 78, 89, 93, 96, 98-100, 103, 104, 106, 111, 116, and 118 with amended claims 1, 5, 8, 10-12, 30, 46, 50-51, 53, 55-57, 59, 61, 63, 68, 76, 78, 89, 93, 96, 98-100, 103, 104, 106, 111, 116, and 118.

    Please delete claims 3, 4, 7, 9, 13, 21-24,36-45, 48, 49, 52, 54, 58, 64-67,79-88, 91, 92, 94, 95, 97, 101-102, 107-110.

1. (Currently amended)   A distributed ontology system for responding to queries comprising:

a central computer within the distributed ontology system comprising a global ontology directory, the global ontology directory indexing class and relation definitions, wherein class definitions define ontological classes, the ontological classes being sets of instances having a common characterization, and relation definitions define ontological relations, the ontological relations being inter-relationships between classes that are used to relate instances of one or more classes;

a plurality of ontology server computers, comprising:

a corresponding plurality of repositories, each repository of the plurality of repositories containing different portions of the class and relation definitions and different portions of superclass-subclass definitions, and wherein at least one superclass-subclass definition is contained in a repository of the plurality of repositories that resides on a different ontology server computer than the ontology server computer housing the repository containing the definition of the subclass or the ontology server computer housing the repository containing the definition of the superclass ; and

a corresponding plurality of query processors for responding to queries relating to the class and the relation definitions in said plurality of repositories;

an authoring tool communicating with said repositories for updating said repositories, comprising:

a validator for ensuring that updates made to said repositories maintain backward compatibility, so that expressions that were valid before being updated remain valid after said updating is performed; and

a relation editor for editing relation definitions in said repositories, by expanding domains of relations;

an Extensible Markup Language (XML) embedder communicating with said repositories for embedding an XML Schema within a designated repository by identifying class and relation definitions implicit in the XML Schema, wherein said identifying comprises user-aided choosing of class and relation definitions implicit in the XML Schema that are embedded within the designated repository; and

a computer network connecting said central computer with said plurality of ontology server computers.

5. (Currently amended) The system of claim 1 wherein at least one of said plurality of ontology server computers further comprise a publisher for publishing class and relation definitions in its repository to said global ontology directory.

8. (Currently amended)   The system of claim 1 wherein said authoring tool has a capability to browse repositories of a plurality of ontology server computers.

10. (Currently amended) The system of claim 1 wherein said authoring tool further comprises a class adder for adding new class definitions to said repositories.

11. (Currently amended) The system of claim 1 wherein said authoring tool further comprises a class editor for editing class definitions in said repositories.

12. (Currently amended) The system of claim 1 wherein said authoring tool further comprises a relation adder for adding relation definitions to said repositories.

30. (Currently amended) The system of claim 29 wherein said XML generator generates an XML Schema with aid of a user choosing which class and relation definitions are to be included in the XML Schema.

46. (Currently amended) A distributed ontology method for responding to queries comprising:

providing a central computer within a distributed ontology system comprising a global ontology directory;

connecting said central computer with a plurality of ontology server computers via a computer network;

managing said global ontology directory for a distributed ontology, the global ontology directory indexing class and relation definitions, wherein class definitions define ontological classes, the ontological classes being sets of instances having a common characterization, and relation definitions define ontological relations, the ontological relations being inter-relationships between classes that are used to relate instances of one or more classes;

managing a plurality of repositories, each repository of the plurality of repositories residing on an ontology server computer of the plurality of ontology server computers, and each repository of the plurality of repositories including a different portion of the class and relation definitions and a different portion of superclass-subclass definitions, wherein at least one superclass-subclass definition resides in a different repository of the plurality of repositories than the repository containing the definition of the subclass or the repository containing the definition of the superclass;

updating the repositories comprising:

validating that updates made to the repositories maintain backward compatibility, so that expressions that were valid before being updated remain valid after said updating is performed; and

editing relation definitions in the repositories, by expanding domains of relations;

communicating with the repositories for embedding an Extensible Markup Language (XML) Schema within a designated repository by identifying class and relation definitions implicit in the XML Schema, with aid of a user choosing which class and relation definitions implicit in the XML Schema are embedded within the designated repository; and

responding to queries relating to the class and the relation definitions in at least one repository of the repositories.

50. (Currently amended) The method of claim 46 further comprising publishing class and relation definitions within at least one repository to the global ontology directory.

51. (Currently amended) The method of claim 46 further comprising seeking out class and relation definitions included in the repositories.

53. (Currently amended) The method of claim 46 wherein said updating further comprises browsing a plurality of repositories.

55. (Currently amended) The method of claim 46 wherein said updating further comprises adding new class definitions to the repositories.

56. (Currently amended) The method of claim 46 wherein said updating further comprises editing class definitions in the repositories.

57. (Currently amended) The method of claim 46 wherein said updating tool further comprises adding relation definitions to the repositories.

59. (Currently amended) The method of claim 46 further comprising searching for class or relation definitions.

61. (Currently amended) The method of claim 46 wherein the class and relation definitions in the repositories include authorship data.

63. (Currently amended) The method of claim 46 further comprising embedding a text file having a description of a class within a repository.

68. (Currently amended) The method of claim 46 further comprising generating a view of a class, by associating with the class a subset of attributes of the class.

76. (Currently amended) The method of claim 46 further comprising displaying icons representing instances of classes.

78. (Currently amended) The method of claim 46 further comprising navigating through class and relation definitions.

89. (Currently amended) An ontology system for responding to queries comprising:

a central computer within a distributed ontology system comprising a global ontology directory for an ontology, the global ontology directory indexing class and relation definitions, wherein class definitions define ontological classes, the ontological classes being sets of instances having a common characterization, and relation definitions define ontological relations, the ontological relations being inter-relationships between classes that are used to relate instances of one or more classes;

a computer network connecting said central computer with a plurality of ontology server computers;

said plurality of ontology server computers comprising:

a plurality of repositories, each repository including a different portion of the class and relation definitions and a different portion of superclass-subclass definitions, wherein at least one superclass-subclass definition resides in a different repository of the plurality of repositories than

the repository containing the definition of the subclass or the repository

containing the definition of the superclass;

an authoring tool for updating said repositories, comprising:

a validator for ensuring that updates made to said repositories

maintain backward compatibility, so that expressions that were valid before

being updated remain valid after said updating is performed; and

a relation editor for editing relation definitions in said

repositories, by expanding domains of relations;

an Extensible Markup Language (XML) embedder

communicating with said repositories for embedding an XML Schema within a

designated repository with aid of a user choosing class and relation

definitions implicit in the XML Schema that are embedded within the

designated repository;

an agent for seeking out class and relation definitions included

in said repositories; and

a query processor for responding to queries relating to the

class and the relation definitions in said repositories.

93. (Currently amended) The system of claim 89 further comprising a

publisher for publishing class and relation definitions within at least one of

said repositories to said global ontology directory.

96. (Currently amended) The system of claim 89 wherein said authoring tool has a capability to browse a plurality of repositories.

98. (Currently amended) The system of claim 89 wherein said authoring tool further comprises a class adder for adding new class definitions to said repositories.

99. (Currently amended) The system of claim 89 wherein said authoring tool further comprises a class editor for editing class definitions in said repositories.

100. (Currently amended) The system of claim 89 wherein said authoring tool further comprises a relation adder for adding relation definitions to said repositories.

103. (Currently amended) The system of claim 89 further comprising an ontology toolkit comprising:

a search tool, for searching said global ontology directory; and

a query tool for querying at least one of said plurality of repositories.

104. (Currently amended) The system of claim 89 wherein the class and relation definitions in said repository include authorship data.

106. (Currently amended) The system of claim 89 further comprising a text

file embedder for embedding a text file having a description of a class within a

repository.

111. (Currently amended) The system of claim 89 further comprising a view

generator for generating a tree of attributes from class and relation

definitions.

116. (Currently amended) The system of claim 89 further comprising a

graphical user interface including icons for displaying instances of classes.

118. (Currently amended) The system of claim 89 further comprising an

ontology navigation tool for viewing class and relation definitions.

Allowable Subject Matter

3.   Claims 1-2, 5-6, 8, 10-12, 14-20, 25-35, 46-47, 50, 51, 53, 55-57, 59-63, 68-78,

89, 90, 93, 96, 98-100, 103-106 and 111-118 are allowed.

The prior art of record, alone or in combination, does not teach or

fairly suggest the combination of steps as recited in independent claim 1,

wherein "the global ontology directory indexing class and relation definitions,

wherein class definitions define ontological classes, the ontological classes

being sets of instances having a common characterization, and relation

definitions define ontological relations; a corresponding plurality of

repositories, each repository of the plurality of repositories containing different portions of the class and relation definitions and different portions of superclass-subclass definitions; an authoring tool for updating said repositories, comprising: a validator for ensuring that updates made to said repositories maintain backward compatibility, so that expressions that were valid before being updated remain valid after said updating is performed; an Extensible Markup Language (XML) embedder communicating with said repositories for embedding an XML Schema within a designated repository by identifying class and relation definitions implicit in the XML Schema, wherein said identifying comprises user-aided choosing of class and relation definitions implicit in the XML Schema that are embedded within the designated repository";

The prior art of record, alone or in combination, does not teach or fairly suggest the combination of steps as recited in independent claim 46, wherein "the global ontology directory indexing class and relation definitions, wherein class definitions define ontological classes, the ontological classes being sets of instances having a common characterization, and relation definitions define ontological relations; managing a plurality of repositories, each repository of the plurality of repositories residing on an ontology server computer of the plurality of ontology server computers, and each repository of the plurality of repositories including a different portion of the class and relation definitions and a different

portion of superclass-subclass definitions; updating the repositories comprising: validating that updates made to the repositories maintain backward compatibility, so that expressions that were valid before being updated remain valid after said updating is performed; communicating with said repositories for embedding an Extensible Markup Language (XML) Schema within a designated repository by identifying class and relation definitions implicit in the XML Schema, with aid of a user choosing which class and relation definitions implicit in the XML Schema are embedded within the designated repository"; and

The prior art of record, alone or in combination, does not teach or fairly suggest the combination of steps as recited in independent claim 89, wherein "the global ontology directory indexing class and relation definitions, wherein class definitions define ontological classes, the ontological classes being sets of instances having a common characterization, and relation definitions define ontological relations; a plurality of repositories, each repository including a different portion of the class and relation definitions and a different portion of superclass-subclass definitions; an authoring tool for updating said repositories, comprising: a validator for ensuring that updates made to said repositories maintain backward compatibility, so that expressions that were valid before being updated remain valid after said updating is performed; an Extensible Markup Language (XML) embedder communicating with said repositories for

embedding an XML Schema within a designated repository with aid of a user

choosing class and relation definitions implicit in the XML Schema that are

embedded within the designated repository".

The dependent claims, bring definite, further limiting, and fully enabled by

the specification are also allowed.

Contact Information

4.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Cam Y T. Truong whose telephone number is (571)

272-4042. The examiner can normally be reached on Monday to Firday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John Breene can be reached on (571) 272-4107. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Cam Y T Truong
Examiner
Art Unit 2162
1/5/2005